



Driving Indiana's Economic Growth

2008 ROAD SCHOOL

***MEPDG
For Local
Governments***



MEPDG

M - Mechanistic

E - Empirical

P - Pavement

D - Design

G - Guide

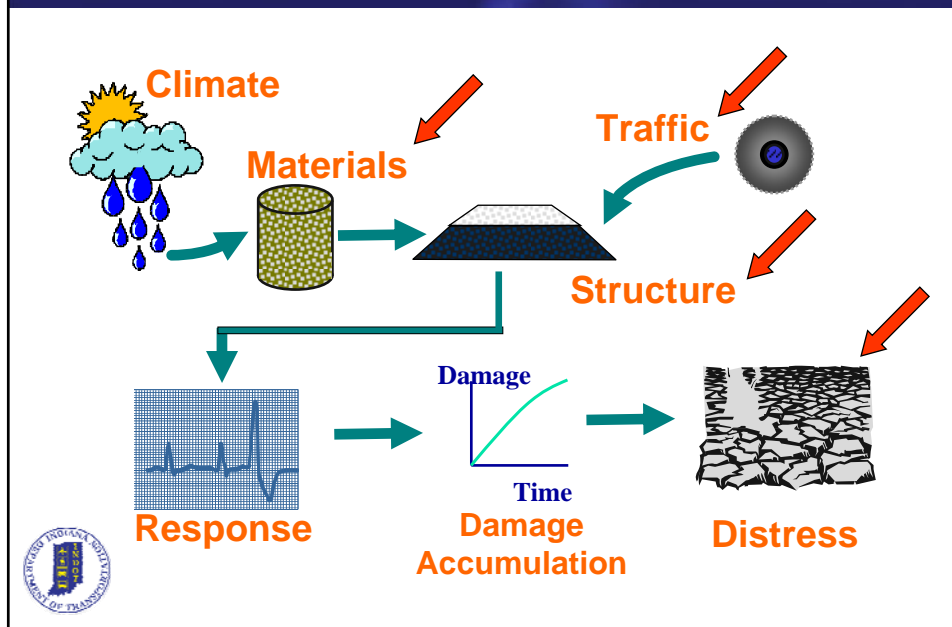


Development of the PDG

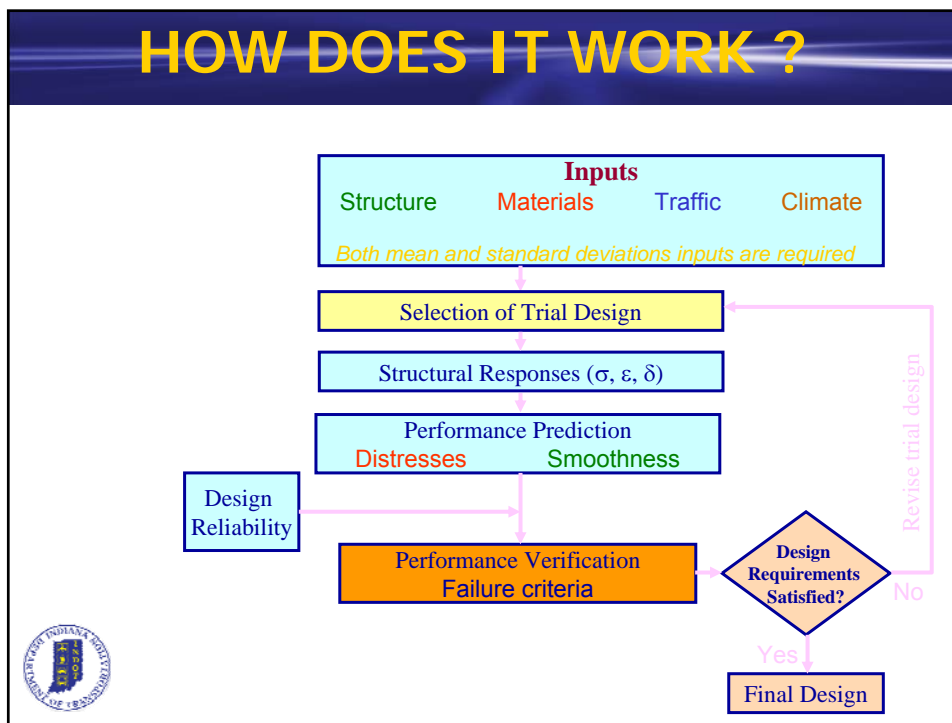
1. *2002 Pavement Design Guide*
2. *200X Pavement Design Guide*
3. *20XX Pavement Design Guide*
4. *MEPDG*



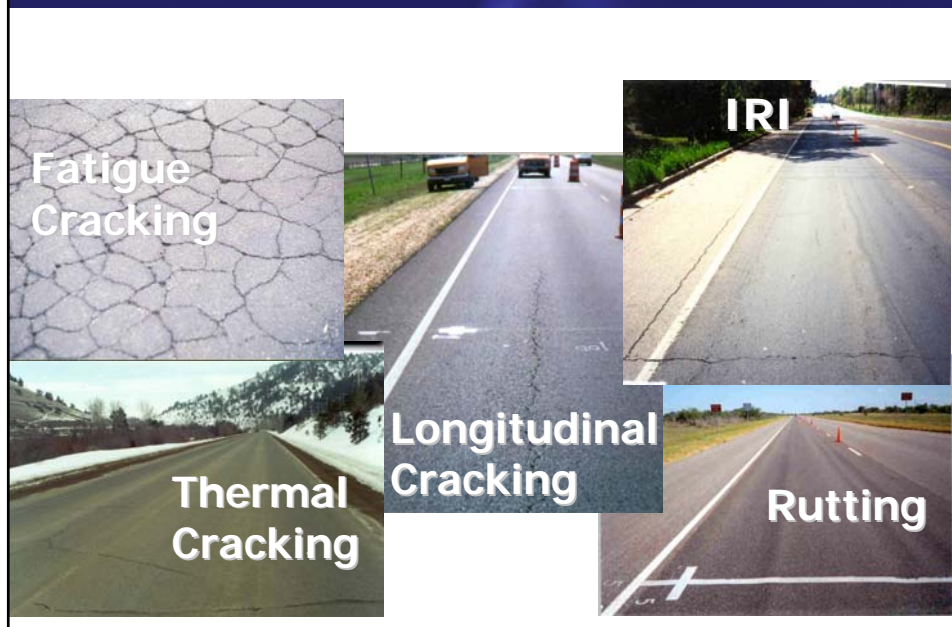
What Is It ?



HOW DOES IT WORK ?



Primary Distresses in MEPDG



MEPDG DESIGN

- Level 1
 - Highest Reliability
- Level 2
 - Medium Reliability, but Practical
- Level 3
 - Default Values



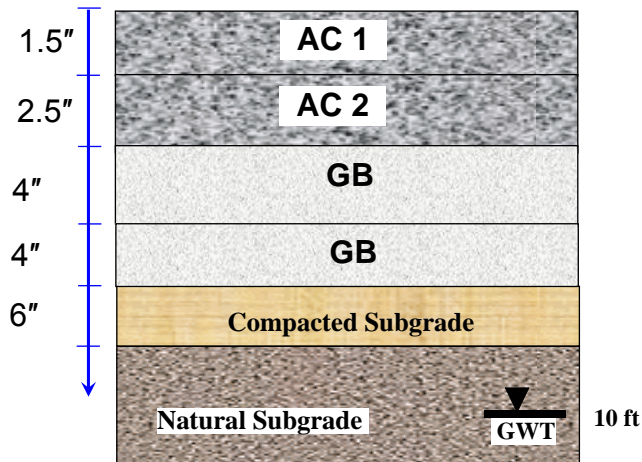
Is it For Local Roads & Streets ?

- **SUPERPAVE Lesson Learned**
 - Misunderstood in the Late 90's
 - Meant for ALL Roads NOT Only Superhighways
- **MEPDG**
 - ALL Pavements
 - Structure is Designed for the Traffic, Climate, Materials, and Structure at the Site



THICKNESS

Pavement Cross Section



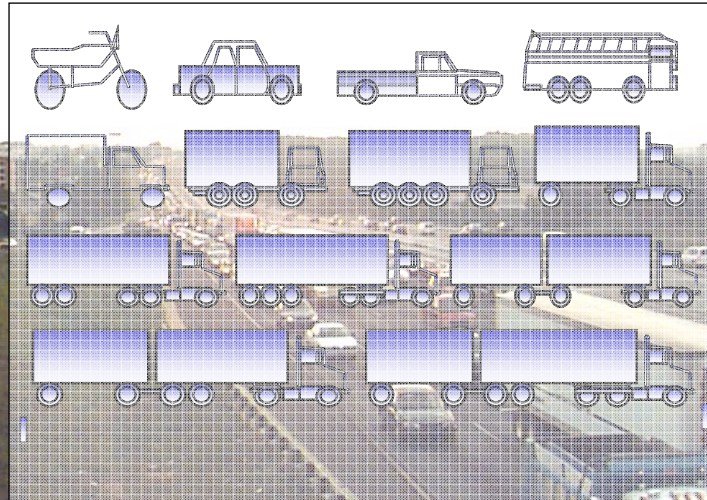
Traffic



TRUCKS

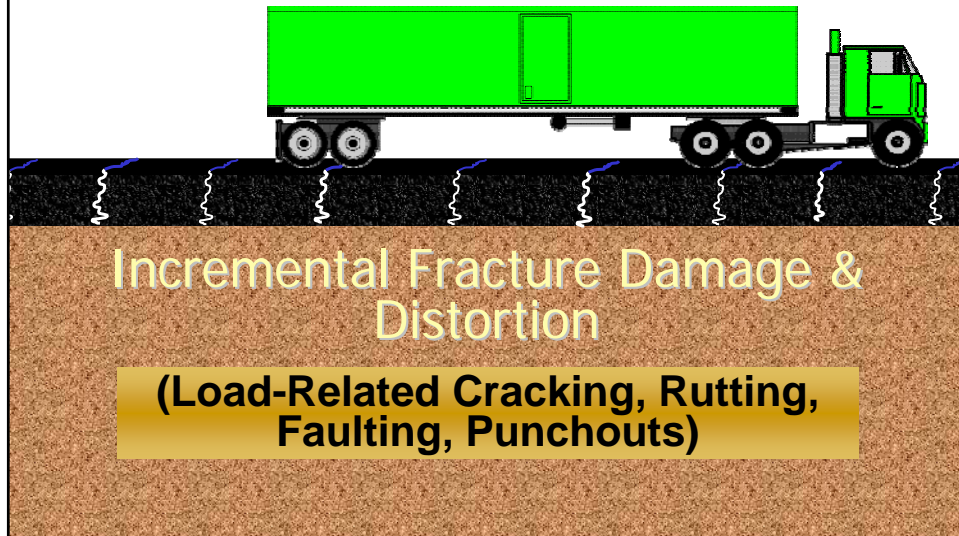
Traffic Mix & Classification

FHWA
Vehicle
Classes;
1
through
13

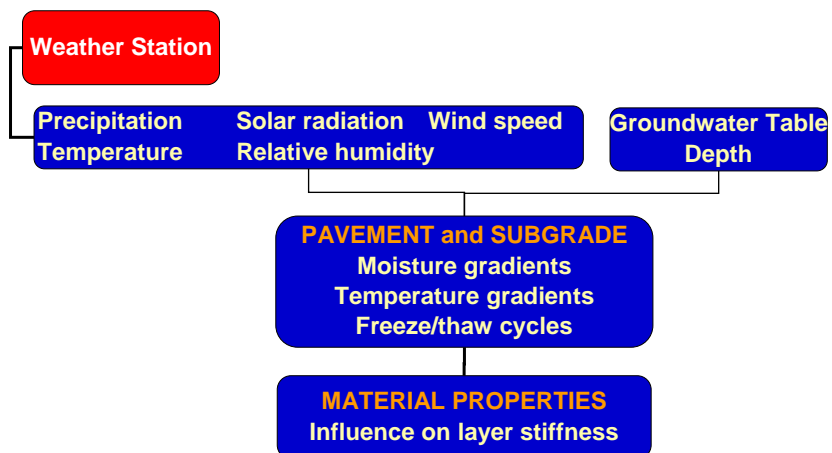




TRUCKS



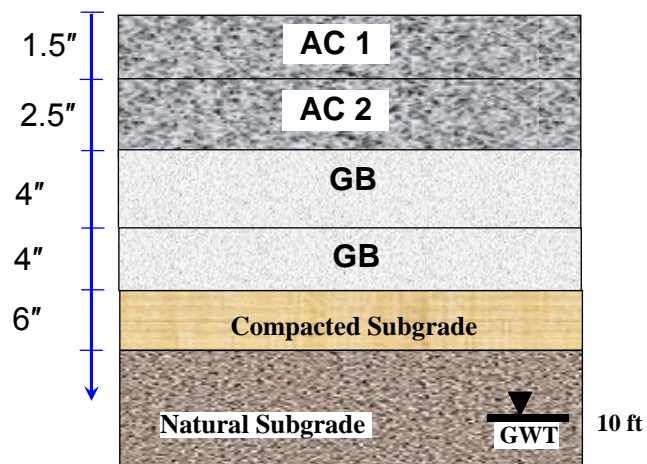
Climate

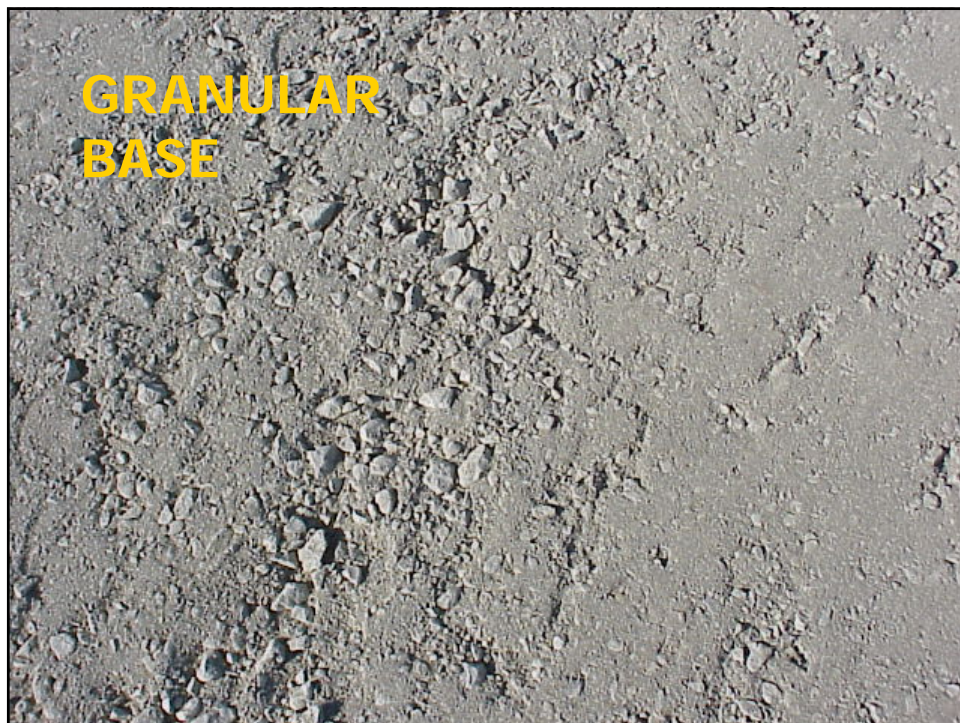


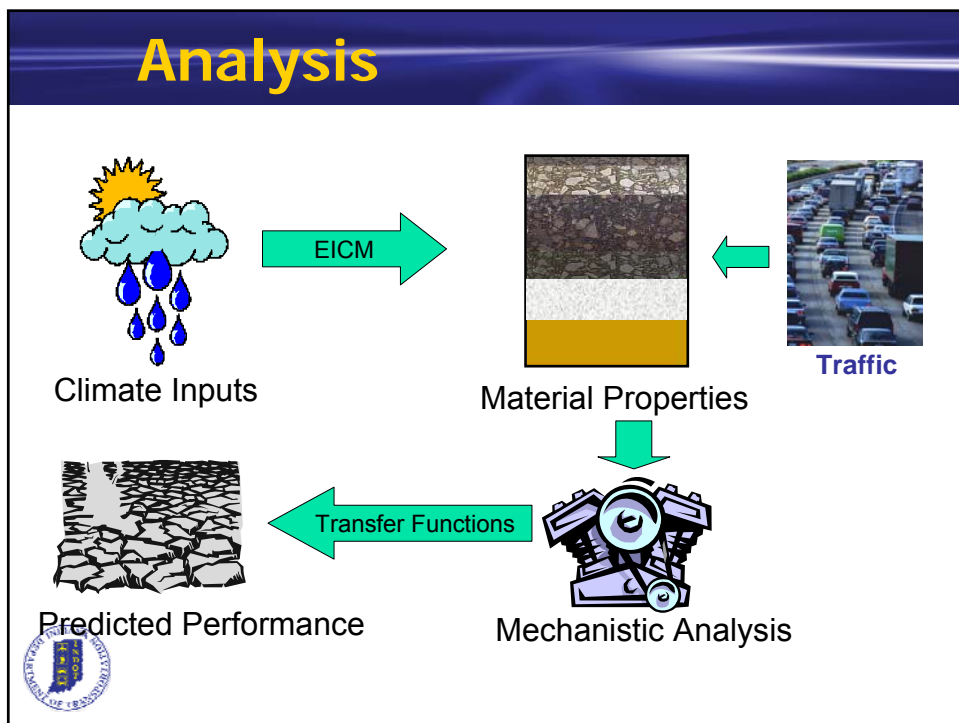


Materials

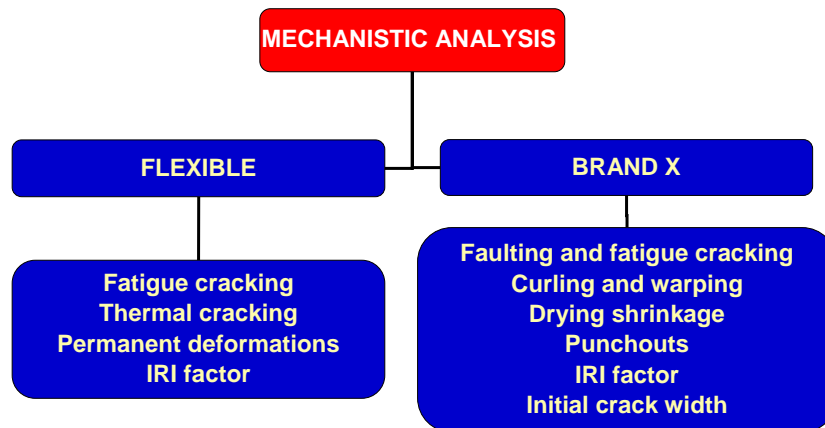
Pavement Cross Section



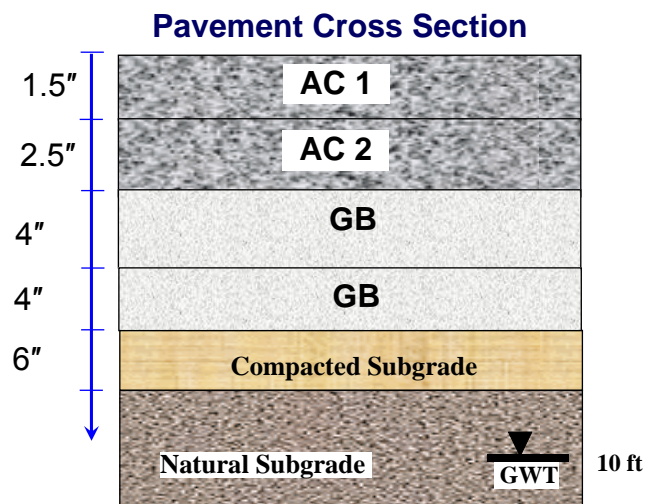




Structure



Structure



Reliability

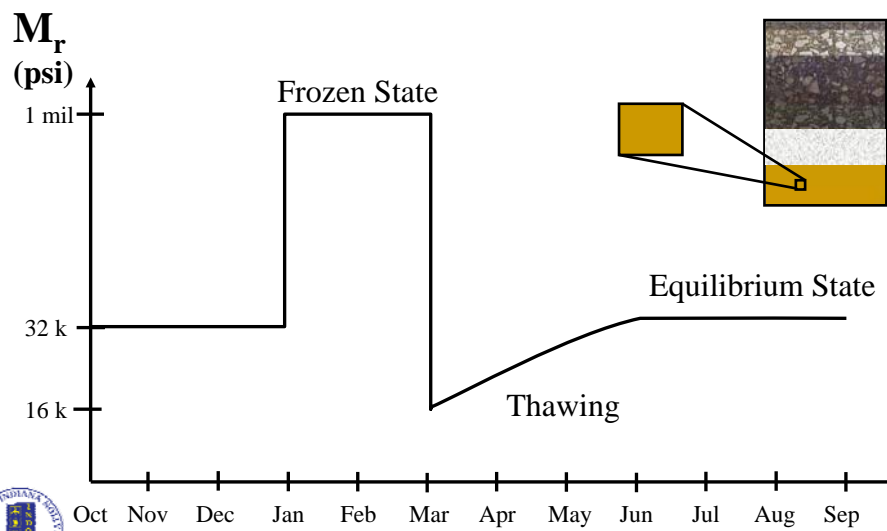
90 %

Vs

50 %



Freeze and Thaw



FWD Testing

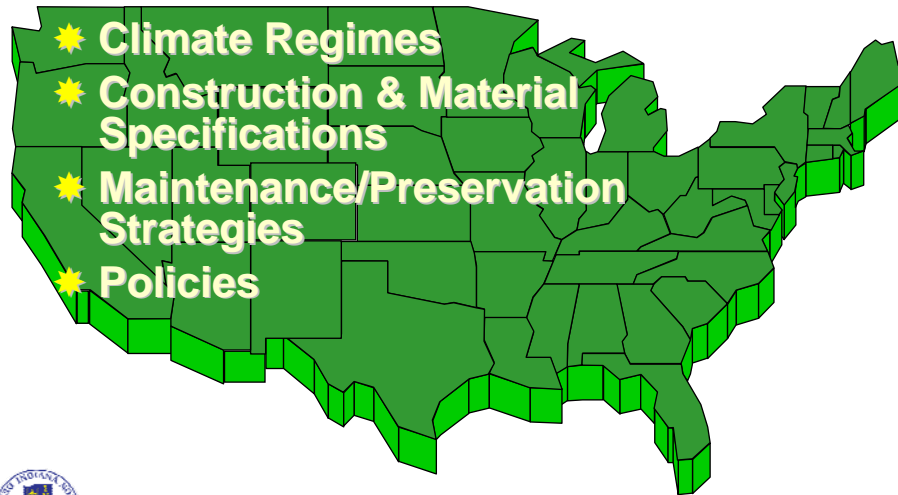


MEPDG Implementation

- *major enhancement to current technology; however the technology is still evolving:*
 - *Do not expect perfect predictions*
 - *Need to locally calibrate to actual field performance*
 - *Need to have a well defined nationally coordinated approach to develop planned model enhancements*

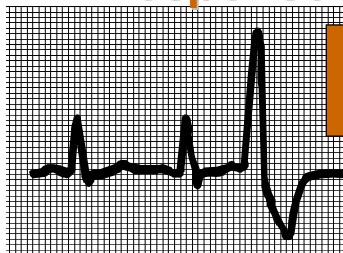


Why Local Calibration?



Calibration: Transfer Functions

Pavement Response



- Stresses
- Strains
- Deflections



TRANSFER
FUNCTION

*Calibration
is a key.*

Pavement Distress



- Fatigue Cracks
- Rutting/Faulting
- Thermal Cracks

DARWin ME Development

- Transfer version 1.0 from NCHRP to AASHTO
- Implement Contract for Version 2.0 Development - August 2008
- Release Darwin ME 2.0 - ?
 - Dependent on Issues Identified
 - Dependent on Funding Level



THE END

**THANK
YOU**

